AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented method for soliciting a sub-population of a population, comprising:

employing a component to identify~~ing~~ the sub-population to solicit and a non-solicited sub-population by using a computer-implemented decision theoretic model, the decision theoretic model constructed to maximize an expected increase in profits; ~~and,~~

setting a solicitation variable to a first value for each of a plurality of members of the solicitation sub-population and to a second value for each of a plurality of members of the non-solicitation sub-population;

soliciting the sub-population identified to solicit; and

setting a purchase variable to a first value for each of the plurality of members of the solicitation and the non-solicitation sub-population that made a purchase and to a second value for each of the plurality of members of the solicitation and the non-solicitation sub-populations that did not make the purchase.

2. (Previously Presented) The method of claim 1, wherein using the computer-implemented decision theoretic model comprises using a decision tree, the decision tree having a plurality of paths from a root node to a plurality of leaf nodes, each of the plurality of paths having a split on a solicitation variable having a first value corresponding to solicitation and a second value corresponding to non-solicitation.

3. (Original) The method of claim 2, wherein the decision tree is constructed such that the split on the solicitation variable of each of the plurality of paths is a last split.

4. (Original) The method of claim 2, wherein the decision tree is constructed such that the split on the solicitation variable of each of the plurality of paths is a first split.

5. (Original) The method of claim 2, wherein each of the plurality of leaf nodes provides a value for a probability conditional on at least a purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase.

6. (Previously Presented) The method of claim 2, wherein identifying the sub-population to solicit comprises computer-implemented acts of:

constructing the decision tree from a sample of the population using a predetermined scoring criterion, each of the plurality of leaf nodes of the tree providing a value for a probability conditional on at least a purchase variable; and,

applying the decision tree against the population to identify the sub-population to solicit to maximize the expected increase in profits.

7. (Currently Amended) The method of claim 6, wherein identifying the sub-population to solicit further initially comprises performing an experiment using ~~the~~ a sample of the population to obtain values for the sample of the population for each of the solicitation variable and a purchase variable, the purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase.

8. (Original) The method of claim 1, wherein soliciting the sub-population identified comprises mailing a solicitation to each of a plurality of members of the sub-population.

9. (Original) The method of claim 1, wherein soliciting the sub-population identified comprises e-mailing a solicitation to each of a plurality of members of the sub-population.

10. (Original) The method of claim 1, wherein soliciting the sub-population identified comprises calling each of a plurality of members of the sub-population.

11. (Currently Amended) A computer-implemented method for constructing a decision theoretic model to identify a sub-population of a population to solicit to maximize an expected increase in profits, comprising:

using a sample of the population to obtain values for the sample of the population for each of a solicitation variable and a purchase variable, the solicitation variable having a first value corresponding to solicitation and a second value corresponding to non-solicitation, and the purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase;

dividing the sample of the population into a non-solicitation group and a solicitation group;

setting the solicitation variable to the first value for each of a plurality of members of the solicitation group and to the second value for each of a plurality of members of the non-solicitation group;

soliciting the solicitation group;

setting the purchase variable to the first value for each of the plurality of members of the solicitation and the non-solicitation groups that made a purchase and to the second value for each of the plurality of members of the solicitation and the non-solicitation groups that did not make the purchase;

utilizing a component to construct~~ing~~ a decision tree as the decision theoretic model from the sample using a predetermined scoring criterion, the decision tree having a plurality of paths from a root node to a plurality of leaf nodes, each of the plurality of paths having a split on the solicitation variable, and each of the plurality of leaf nodes providing a value for a probability conditional on at least the purchase variable; and,

applying the decision tree against the population to identify the sub-population to solicit to maximize the expected increase in profits.

12. (Cancelled)

13. (Previously Presented) The computer-implemented method of claim 11, wherein construction of the decision tree comprises using a greedy approach.

14. (Previously Presented) The computer-implemented method of claim 11, wherein the predetermined scoring criterion is a holdout criterion.

15. (Previously Presented) The computer-implemented method of claim 11, wherein the predetermined scoring criterion is a cross-validation holdout criterion.

16. (Previously Presented) The computer-implemented method of claim 11, wherein the predetermined scoring criterion is a marginal likelihood criterion.

17. (Previously Presented) The computer-implemented method of claim 11, wherein the predetermined scoring criterion is an adjusted marginal likelihood criterion.

18. (Previously Presented) The computer-implemented method of claim 11, wherein the split on the solicitation variable of each of the plurality of paths is a last split.

19. (Previously Presented) The computer-implemented method of claim 18, wherein constructing the decision tree comprises: initializing the decision tree with an initial single leaf node as the root node;

using the greedy approach to construct the decision tree with no splits on the solicitation variable, the decision tree after construction using the greedy approach having a plurality of interim leaf nodes; and,

performing a split on the solicitation variable at each of the plurality of interim leaf nodes to generate the plurality of leaf nodes.

20. (Previously Presented) The computer-implemented method of claim 11, wherein the split on the solicitation variable of each of the plurality of paths is a first split at the root node.

21. (Previously Presented) The computer-implemented method of claim 20, wherein constructing the decision tree comprises:

initializing the decision tree with the first split at the root node on the solicitation variable; and,

using a greedy approach to finish constructing the decision tree.

22. (Previously Presented) The computer-implemented method of claim 11, further comprising soliciting the sub-population identified.

23. (Previously Presented) The computer-implemented method of claim 11, wherein the method is performed by execution of a computer program by a processor from a computer-readable medium.

24. (Currently Amended) A computer-implemented method using a module for constructing a decision theoretic model to identify a sub-population of a population to solicit and a non-solicited sub-population to maximize an expected increase in profits, comprising:

using a sample of the population to obtain values for the sample of the population for each of a solicitation variable and a purchase variable, the solicitation variable having a first value corresponding to solicitation and a second value corresponding to non-solicitation, and the purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase;

constructing a decision tree as the decision theoretic model from the sample using a greedy approach and a marginal likelihood scoring criterion, the decision tree having a plurality of paths from a root node to a plurality of leaf nodes, each of the plurality of paths having a last split on the solicitation variable, and each of the plurality of leaf nodes providing a value for a probability conditional on at least the purchase variable; ~~and,~~

applying the decision tree against the population to identify the sub-population to solicit to maximize the expected increase in profits;

setting a solicitation variable to the first value for each of a plurality of members of the solicitation sub-population and to a second value for each of a plurality of members of the non-solicitation sub-population; and

setting a purchase variable to the first value for each of the plurality of members of the solicitation and the non-solicitation sub-populations that made a purchase and to a second value for each of the plurality of members of the solicitation and the non-solicitation sub-populations that did not make the purchase.

25. (Previously Presented) The computer-implemented method of claim 24 further comprising:

dividing the sample of the population into a non-solicitation group and a solicitation group;

setting the solicitation variable to the first value for each of a plurality of members of the solicitation group and to the second value for each of a plurality of members of the non-solicitation group;

soliciting the solicitation group; and,

setting the purchase variable to the first value for each of the plurality of members of the solicitation and the non-solicitation groups that made a purchase and to the second value for each of the plurality of members of the solicitation and the non-solicitation groups that did not make the purchase.

26. (Original) The method of claim 24, further comprising soliciting the sub-population identified by one of: calling each of a plurality of members of the sub-population, mailing a solicitation to each of the plurality of members of the sub-population, and e-mailing the solicitation to each of the plurality of members of the sub-population.

27. (Previously Presented) The computer-implemented method of claim 24, wherein the method is performed by execution of a computer program by a processor from a computer-readable medium.

28. (Currently Amended) A computer implemented system for improving profits associated with advertising, comprising:

a module that receives input regarding a population~~;~~ ~~and~~

a decision theoretic model that determines a subset of the population to solicit with the advertising and a non-solicited sub-population so as to maximize an expected increase in profits from the solicitation;

means for setting a solicitation variable to a first value for each of a plurality of members of the solicitation sub-population and to a second value for each of a plurality of members of the non-solicitation sub-population; and

means for setting a purchase variable to a first value for each of the plurality of members of the solicitation and the non-solicitation sub-populations that made a purchase and to a second value for each of the plurality of members of the solicitation and the non-solicitation sub-populations that did not make the purchase.

29. (Currently Amended) The system of claim [[1]] 28, wherein the decision theoretic model comprises a decision tree, the decision tree includes a plurality of paths from a root node to a plurality of leaf nodes, each of the plurality of paths having a split on [[a]] the solicitation variable having a first value corresponding to solicitation and a second value corresponding to non-solicitation.

30. (Currently Amended) The system of claim [[2]] 29, wherein each of the plurality of leaf nodes provides a value for a probability conditional on at least [[a]] the purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase.